

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of:

RENÉ GRÄWE ET AL.

Serial No.: 10/532,036

Filed: April 21, 2005

For: USE OF POLYMER POWDERS THAT ARE REDISPERSIBLE IN WATER  
AS BINDING AGENT FOR JOINTING SAND

Attorney Docket No.: WAS 0692 PUSA

Group Art Unit: 1796

Examiner: Kriellion Antionette Sanders

**APPEAL BRIEF UNDER 37 C.F.R. § 41.37**

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
U.S. Patent & Trademark Office  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This is an Appeal Brief from the final rejection of claims 11 - 19, 22 - 25, and 27 - 29 of the Office Action mailed on August 6, 2008 for the above-identified patent application.

**I. REAL PARTY IN INTEREST**

The real party in interest is Wacker Chemie AG ("Assignee"), a corporation organized and existing under the laws of Germany, and having a place of business at Hanns-Seidel-Platz 4, Muenchen, Germany 81737, as set forth in the assignment recorded in the U.S. Patent and Trademark Office on October 1, 2008, Reel 021603/Frame 0608.

**II. RELATED APPEALS AND INTERFERENCES**

There are no appeals, interferences or judicial proceedings known to the Appellant, the Appellant's legal representative, or the Assignee which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

### **III. STATUS OF CLAIMS**

Claims 11 - 29 are pending in this application. Claims 11 - 19, 22 - 25, and 27 - 29 have been rejected and are the subject of this appeal. There is no rejection of claims 20, 21, or 26.

### **IV. STATUS OF AMENDMENTS**

A response after final rejection was filed on October 31, 2008, and has been accepted for entry. No claim amendments were made in the response.

### **V. SUMMARY OF CLAIMED SUBJECT MATTER**

The claimed invention as set forth in claim 1 is directed to a process for jointing with sand, which involves forming a jointing composition by adding a binder to dry sand, the binder consisting essentially of one or more redispersible polymer powders, at least one of which is one of two functionalized redispersible polymer powders (a) and (b) (claim 1 as filed; specification page 1, lines 4 - 9, page 2, lines 7 - 11; page 8, line 38 to page 9, line 4), wherein the functionalized redispersible polymer powders (a) and (b) are:

- a) polyvinyl alcohol-stabilized copolymers comprising the polymerized product of at least one monomer selected from the group consisting of vinyl esters of straight-chain or branched alkylcarboxylic acids having 1 to 18 carbon atoms; (meth)acrylates of branched or straight-chain alcohols or diols having 1 to 18 carbon atoms; dienes; olefins; vinylaromatics; and vinyl halides, further containing from 0.1 to 20% by weight, based on the total weight of the copolymer, of one or more postcrosslinking comonomers selected from the group consisting of acrylamidoglycolic acid; methyl methacrylamidoglycolate; N-methylolacrylamide; -methylolmethacrylamide; allyl N-methylolcarbamate; alkyl ethers and

esters of N-methylolacrylamide, of N-methylolmethacrylamide, and of allyl N-methylolcarbamate; (meth)acryloyloxypropyltri(alkoxy)silanes; vinyltrialkoxysilanes; and vinylmethyldialkoxysilanes, and

[claim 1 as filed; specification, page 2, lines 13 - 30)

- b) polymers comprising the polymerized product of at least one monomer selected from the group consisting of vinyl esters of straight-chain or branched alkylcarboxylic acids having 1 to 18 carbon atoms; (meth)acrylates of branched or straight-chain alcohols or diols having 1 to 18 carbon atoms; dienes; olefins; vinylaromatics; and vinyl halides, said polymers stabilized with polymers comprising ethylenically unsaturated mono- or dicarboxylic acids or anhydrides thereof, having an acid content of from 50 to 99 mol%,

[claim 1 as filed, specification page 2, line 31, to page 3, line 3],

and sweeping the jointing composition in dry or moist form into joints [specification page 9, lines 1 - 3].

In a preferred embodiment as claimed in claim 12, a functionalized redispersible polymer powder (a) is employed [claim 2 as filed].

In another preferred embodiment as claimed in claim 15, a functionalized redispersible polymer powder (b) is employed [claim 5, as filed].

Claims 16 and 17 require the protective colloid of the polymers (b) to be a polyacrylic acid or polymethacrylic acid (claim 6 as filed; specification page 6, line 21 to page 7, line 3).

Claims 18 and 19 require the protective colloid of the polymers (b) to be a copolymer containing acrylic acid, methacrylic acid, maleic acid, or maleic anhydride, optionally with other monomers copolymerizable therewith, and having a carboxylic acid group content of 80 - 99 mol%. (Claim 7 as filed; page 6, line 21 to page 7, line 3, and page 6, line 33).

## **VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

A. Claims 11 - 14 and 23 - 25 stand rejected under 35 U.S.C. § 103(a) as obvious over Weitzel U.S. Patent 6,605,663 ("*Weitzel '663*").

B. Claims 11, 15 - 19, 22 - 23, and 27 - 29 stand rejected under 35 U.S.C. § 103(a) over Weitzel et al. U.S. Patent 6,262,167 ("*Weitzel '167*").

## **VII. ARGUMENT**

The claimed invention is directed to jointing with sand. In the construction of streets, walkways, driveways, etc., where paving stones, bricks, or tiles are used, sand is commonly swept into the joints between the "pavers" to stabilize them against movement, for example tilting, etc., as the paved surfaces are used by pedestrian, bicycle, or vehicular traffic. In these applications, hydraulic binders such as Portland cement, aluminosilicate cement, etc., are generally not used, since the hard "joint" which results is subject to freeze/thaw cracking, and makes reworking of the paved surface difficult. However, when sand is used alone (sand including small aggregate, pigmentary solids or other finely ground substances in addition to the major silica or limestone component), the sand may be gradually washed away, by rainfall, for

example. Applicants have discovered that certain functionalized redispersible powders can be added to dry sand, and the jointing mixture thereby obtained, either in a dry or moist condition, can be swept into the joints between pavers, ultimately setting to a composition which resists erosion by water, yet which can easily be reworked if maintenance is required. Surprisingly, conventional water redispersible polymers fail in this application.

The functionalized redispersible polymer powders used are those specified in the claims as copolymers a) and copolymers b). Copolymers a) are functionalized with post-crosslinking comonomers and stabilized by polyvinyl alcohol as the protective colloid whereas copolymers b) are conventional redispersible polymers functionalized through the use of protective colloids which are polymers prepared from ethylenically unsaturated mono- or dicarboxylic acids and/or their anhydrides.

In addition to these functionalized redispersible polymer powders, the composition may contain pulverulent bifunctional masked aldehydes, preferably also with an acidic additive, when copolymer(s) a) are employed, and a basic additive when copolymer(s) b) are employed.

In Example 1, a polyacrylic acid stabilized copolymer b) was employed, and in Example 2, a polyvinyl alcohol stabilized copolymer a) was employed. In Comparative Example 3, a conventional vinyl acetate/ethylene redispersible polymer powder stabilized by polyvinyl alcohol protective colloid was used. Both Example 1 and Example 2 produced sound joints which prevent erosion, but which still exhibited water permeability, wherein in Comparative Example 3, no binding was achieved.

**A. Claims 11 - 14 and 23 - 25 are Patentable Over Weitzel '663**

Claims 11 - 14, and 23 - 25 have been rejected under 35 U.S.C. § 103(a) as unpatentable over commonly assigned and copending U.S. patent 6,605,663, to *Weitzel*. This patent is a reference only under 35 U.S.C. § 102(e), is commonly assigned, and both the subject matter of *Weitzel* and the claimed invention, at the time the claimed invention was made, were subject to an obligation of assignment to Wacker Polymer Systems GmbH & Co. KG. Thus, *Weitzel* cannot be used in a rejection under 35 U.S.C. § 103(a) per 35 U.S.C. § 103(c).

In the Advisory Action of November 18, 2008, the Examiner stated, on the "Continuation Sheet (Page 3):

Applicant has indicated that the applied reference, Weitzel, U.S. Patent No. 6605663 has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Appellants respectfully submit that this is not the proper standard. 35 U.S.C. § 103(c) reads as follows:

Subject matter developed by another person, which qualifies as prior art only under one or more of subsections (e), (f), and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the claimed invention was made, owned by the same person or subject to an obligation of assignment to the same person.

The statute only requires that the subject matter (the reference) and the claimed invention were owned by the same person or subject to an obligation of assignment to the same person, at the time the invention was made, in order for the exclusion of §103(c) to apply. Inventorship is not an issue.

In the present case, *Weitzel '663* was subject to an obligation of assignment to Wacker Polymer Systems GmbH & Co. KG, and was so assigned, the assignment recorded at reel 010843/frame 0866 on May 31, 2000. The present application was also subject to assignment to Wacker Polymer Systems GmbH & Co., KG at the time the invention was made, and was in fact so assigned, the assignment recorded at reel 017078/frame 0676 on April 21, 2005. Appellants' attorney so stated in the Response After Final, page 2, ¶3. 35 U.S.C. § 103(c) does not require that any invention disclosed but not claimed in the reference was derived from an inventor of the present application, nor does the statute require a Declaration under Rule 132. All the statute requires is that the reference and the subject application were commonly assigned or subject to common assignment at the time the claimed invention was made. That is the case. *Weitzel '663* is not a reference under 35 U.S.C. § 103(c), and the rejection over this reference should be reversed for this reason.

However, the claimed invention is also patentable over *Weitzel '663*, regardless. *Weitzel '663* is directed to a very specific polymerization method for producing polyvinyl alcohol-stabilized addition polymers. Such polymers have been used for many years as additives to hydraulically settable cements and mortars, for example those based on Portland cement, lime, or gypsum plaster.

Sand is not a mortar nor a hydraulically settable composition. All hydraulically settable compositions have in common the presence of a hydraulically settable inorganic binder, always present in large amount. The polymer aids flexibility of the cured mortar or cement.

Appellants' claims recite that the binder "consist essentially of" the claimed polymers. This transitional phrase prohibits the addition of additional binders which would materially affect the basic and novel characteristics of the composition. *See, e.g.* MPEP § 2111.03. Hydraulically settable inorganic binders are just such binders, i.e. would materially, and drastically, affect the basic and novel characteristics of the jointing composition.

The subject invention is directed to jointing with sand. For example, in cobblestone streets, brick driveways, patios, and walkways, sand is often swept into joints. However, since there is no binder, the sand can settle and wash away. In the past, cements such as Portland cement or lime have been added to the dry sand before it is swept into the joint. The hydraulically settable jointing composition is then moistened, and the cement causes the jointing composition to set to a hard brittle solid. This set composition is subject to cracking and disintegration by freeze thaw cycles, heavy traffic, ground settling, etc., but once cracked or disintegrated, cannot be reset. It must be labor-intensively removed and fresh jointing composition applied.

In contrast, the subject invention jointing compositions, which contain no hydraulic binders in any amount which would materially affect the basic and novel characteristics of the jointing composition, but instead contain the claimed redispersible polymer binders, are far more flexible and thus less subject to the types of damage discussed previously. Most importantly, if damage does occur, the joint can be rewet and reset. Cementitious compositions do not do this, and such hydraulically settable binders would modify the composition such that cracking is pronounced and resettability is not possible. These materials clearly substantially and materially alter the basic and novel characteristics of the composition. Thus, jointing compositions such as mortars and cements are not within the scope of the claims due to the "consisting essentially of" language which precedes the word "binder." Please note that this language limits only the binder. Nor does the earlier use of "comprising" in the claim trump the legally recognized meaning of "consisting essentially of", just as a Markush group is limited to



its members by the "consisting of" language despite a general transitional phrase such as "comprising" following the preamble. The MPEP may be consulted in this regard.

*Weitzel '663* does not teach or suggest that any of his polymers are suitable for jointing sand, and in fact many of his disclosed compositions are not suitable. The claimed invention does not employ polymers generally, but rather employs specific polymers. *Weitzel '663* does not direct the skilled artisan to the claimed polymers. For example, the methylo-functional monomers which are required in the a) polymers are only optional monomers in *Weitzel*, and no examples contain them. Moreover, the polymers of *Weitzel '663* are (meth)acrylate polymers which contain but limited amounts of comonomers. Appellants' polymers are principally of other monomers, which may contain small amounts of methacrylate comonomers. This is the understanding of one skilled in the art, who views the claimed polymers and those of *Weitzel '663* as essential opposites.

Because the *Weitzel '663* polymers are disclosed only for use in hydraulically settable cements and mortars and like compositions, where binding is accomplished irreversibly by hydraulically setting mineral binders, and since the claimed invention excludes any amount of such binders which would materially affect the basic and novel characteristics of the invention, the rejection under 35 U.S.C. § 103(a) should be reversed for this reason as well. *Weitzel '663* simply does not teach or suggest jointing with sand containing essentially only redispersible polymer powders as the binding agent, much less the specific functionalized polymers claimed.

**1. Claims 11, 15 - 19, 22 - 23, and 27 - 29  
are Patentable Over Weitzel '167.**

Claims 11, 15 - 19, 22 - 23, and 27 - 29 have been rejected under 35 U.S.C. § 103(a) over Weitzel et al. U.S. 6,262,167 ("*Weitzel '167*"). *Weitzel '167* discloses protective colloids which are unsaturated polyester or polyamide polymers. These polyester and polyamide protective colloids are said to be suitable for use in preparing redispersible polymer powders.

These polymers are prepared by reacting an unsaturated dicarboxylic acid or its anhydride with a polyol (diol) in the case of polyesters, or a polyamine (diamine) in the case of polyamides. During the courses of polyesterification and polyamidization, the carboxylic acid groups are consumed, forming the respective ester and amide linkages. Hence, the only possible remaining carboxylic acid groups are at the chain termini, and only then if an excess of dicarboxylic acid is employed. As a result, the percentage of remaining acid groups is exceptionally small.

*Weitzel '167*, like *Weitzel*, discloses use of his products as additives in hydraulically settable mortars and cements, but not as a binder for sand without the use of hydraulically settable binders. The "consisting essentially of" language relative to the binder component in the claims precludes the use of cementitious binders, as previously discussed with reference to *Weitzel '663*. The rejection over *Weitzel '167* should be respectfully withdrawn for this reason.

However, the claims also require that component b) contain, as a protective colloid, a polymer of ethylenically unsaturated mono- or dicarboxylic acids having a carboxylic acid content of 50 - 99 mol%. The protective colloids of *Weitzel '167* do not meet this claim limitation, as in *Weitzel '167*, the carboxylic acid groups of the monomers are consumed by esterification or amidization, and hence substantially no acid groups are left. *Weitzel '167* could not construct a polymer having even 40 mol % of acid groups. Withdrawal of the rejection over *Weitzel '167* is respectfully solicited for this additional reason.

The same arguments apply with even greater force to claims 18 and 19, which require from 80 - 99 mol% carboxylic acid groups. For claims 16, 17, and 28, polyacrylic acid, polymethacrylic acid, or mixtures thereof are used as the protective colloid. These polymers are homopolymers of acrylic acid and methacrylic acid. *Weitzel '167* does not disclose, teach, or suggest any such polymers. All his polymers are polyesters or polyamides. These claims are separately patentable.

In the Advisory Action of November 18, 2008, the Examiner stated in the "Continuation Sheet" (page 3):

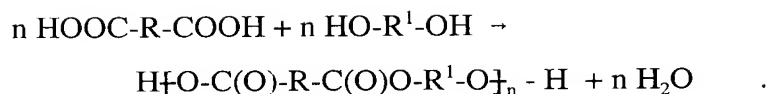
Continuation of 11. does NOT place the application in condition for allowance because: Applicant's arguments pertaining to Weitzel 6262167 have not been found to be persuasive. The arguments require further considerations to the number of remaining carboxylic acid groups present in the protective colloids of Weitzel. Applicant's arguments have been considered to be based upon opinion.

The interpretation of both the subject invention and the prior art is viewed from the perspective of one of ordinary skill in the art, i.e. a polymer chemist. Appellants' comments in their Response After Final were not based upon opinion, but upon facts so well recognized in the polymer arts that Judicial Notice may be taken thereof.

Appellants' polymers (b) must be stabilized by a protective colloid having 50 - 99 mol% carboxylic acid groups. The Examiner's position appears to be that the polymers *Weitzel '167* discloses as protective colloids meet this limitation. One skilled in the polymer arts is aware that this is clearly not the case.

The preparation of polyesters from saturated or unsaturated dicarboxylic acids or esterifiable derivatives thereof with diols or polyols is a very mature art. Polyesters have been manufactured for well over 60 years, and are used in large tonnage amounts for numerous purposes, including carpet and clothing yarns and fibers, plastic bottles, food trays, unsaturated polyester molding compositions, and the like.

The polyesterification reaction of carboxylic acids with diols is well known, and is as follows:



During the reaction, water is continuously removed, to drive the reaction toward polymer formation. In lieu of a dicarboxylic acid, a di(carboxylic acid chloride) or dicarboxylic acid anhydride may be used. The former liberates HCl, instead of water, while the latter liberates nothing. Acid chlorides and anhydrides are both more reactive than their dicarboxylic acid analogous.

If absolutely equimolar amounts of diacid and diol are used, the result is a very high molecular weight, relatively high melting point polymer whose polymer molecules contain on average, 1 terminal carboxylic acid group, and 1 terminal hydroxyl group. However, if a molar excess of dicarboxylic acid is employed, the polymers will be substantially carboxylic acid-terminated at both ends, while if an excess of diol is used, the polymers will be hydroxyl-terminated at both ends. As the molar excess of either reactant increases, the molecular weight decreases. All this is well known to those skilled in the art.

*Weitzel '167* does not desire to make a high melting polymer, but a low molecular weight oligomer. His discloses molecular weights are 500 - 20,000 g/mol (col. 3, lines 3 - 5).

Examples 1 and 2 are instructive. In Example 1, 233.4 g (m.w. 106.0, 2.20 mol) diethylene glycol was polyesterified with 196.1 g (m.w. 98.0, 2.00 mol) of maleic anhydride (0.20 mol diol excess). Since the diol was used in large excess, the polymer was hydroxyl-terminated and contained no free carboxylic acid groups. The molecular weight was 6000.

In Example 2, 247.8 g 1,4-butanediol (mw 90.0; 2.75 mol) was polyesterified with maleic anhydride (mw. 98.0; 2.50 mol). The larger excess (0.25 mol) of diol resulted in a lower weight oligomer than Example 1, having a molecular weight of only 3000. Like Example 1,

since the diol is used in excess, the polymer is hydroxyl-terminated, and contains no free carboxylic acid groups.

*Weitzel '167* does not indicate that his polymers require hydroxyl-termination. Therefore, one skilled in the art would assume that rather than use an excess of diol, as in Examples 1 and 2, an excess of carboxylic acid could be used instead. The result would be a polymer terminated on both ends by carboxylic acid groups. What would the carboxylic acid group content be if this were the case?

At a molecular weight of 6000 (Example 1), the presence of two terminal carboxylic acid groups would be 2 mol/64 mol monomer units (glycol and dicarboxylic acid), for a mol percentage of 3.2%. For Example 2, this percentage would be 2 mol/34 mol monomer units, for a mol percentage of 5.9 mol%. Even in a worse case scenario, with the lowest molecular weight polyester disclosed by *Weitzel '167*, a molecular weight of 500, the mol% of carboxylic acid groups would be only about 2 mol carboxylic acid group/5.4 mol monomers, or about 37 mol%. This is far less than the 50 - 99 mol% required by Appellants. The protective colloids containing 50 - 99 mol% carboxylic acid groups of Appellants are not polyesters, because these cannot provide the requisite mol percentage of carboxylic acid groups. Rather, as explained on pages 6 - 7, Appellants' protective colloids are addition polymers such as polyacrylic acid and polymethacrylic acid, which are not polyesters, and which are the subject matter of claims 15 - 19.

*Weitzel '167* discloses no such polymers, and the rejection of the claims over *Weitzel '167* should be reversed for this reason.

2. **Claims 16, 17 are Separately Patentable**

*Weitzel '167* does not disclose nor does he teach or suggest use of polyacrylic acid or polymethacrylic acid as protective colloids for any polymer. Claims 16 and 17 are separately patentable.


3. **Claims 18, 19 are Separately Patentable.**

*Weitzel '167* does not disclose nor does he teach or suggest any polymer similar to those claimed in claims 18 and 19. The only polymers disclosed by *Weitzel '167* as protective colloids are polyesters and polyamides, none of which can even come close to the required 80 - 99 mol% of carboxyl groups required by these claims. Claims 18 and 19 are separately patentable.

Reversal of all rejections of record is respectfully solicited.

The fee of \$540.00 as applicable under the provisions of 37 C.F.R. § 41.20(b)(2) is being charged to Deposit Account No. 02-3978 via electronic authorization submitted concurrently herewith. The Commissioner is hereby authorized to charge any fees or credit any overpayments as a result of the filing of this paper to Deposit Account No. 02-3978.

Respectfully submitted,  
**RENÉ GRÄWE ET AL.**

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Enclosure - Appendices

### **VIII. CLAIMS APPENDIX**

Claims 1 - 10. (Cancelled)

11. A process for jointing with sand, comprising forming a jointing composition by adding a binder to dry sand, the binder consisting essentially of a powder composition of one or more redispersible polymer powders, at least one redispersible polymer powder being a functionalized, redispersible polymer powder selected from the group consisting of

- a) polyvinyl alcohol-stabilized copolymers comprising the polymerized product of at least one monomer selected from the group consisting of vinyl esters of straight-chain or branched alkylcarboxylic acids having 1 to 18 carbon atoms; (meth)acrylates of branched or straight-chain alcohols or diols having 1 to 18 carbon atoms; dienes; olefins; vinylaromatics; and vinyl halides, further containing from 0.1 to 20% by weight, based on the total weight of the copolymer, of one or more postcrosslinking comonomers selected from the group consisting of acrylamidoglycolic acid; methyl methacrylamidoglycolate; N-methylolacrylamide; -methylolmethacrylamide; allyl N-methylolcarbamate; alkyl ethers and esters of N-methylolacrylamide, of N-methylolmethacrylamide, and of allyl N-methylolcarbamate; (meth)acryloyloxypropyltri(alkoxy)silanes; vinyltrialkoxysilanes; and vinylmethyldialkoxysilanes, and



- b) polymers comprising the polymerized product of at least one monomer selected from the group consisting of vinyl esters of straight-chain or branched alkylcarboxylic acids having 1 to 18 carbon atoms; (meth)acrylates of branched or straight-chain alcohols or diols having 1 to 18 carbon atoms; dienes; olefins; vinylaromatics; and vinyl halides, said polymers stabilized with polymers comprising ethylenically unsaturated mono- or dicarboxylic acids or anhydrides thereof, having an acid content of from 50 to 99 mol%,
- c) optionally, when copolymer a) is employed, a bifunctional masked aldehyde, and
- d) optionally, a pulverulent acidic or basic additive, and

sweeping the jointing composition in dry or moist form into joints.

12. The process of claim 11, wherein copolymers a) are employed, wherein copolymers a) contain one or more monomer units selected from the group consisting of vinyl acetate, vinyl esters of  $\alpha$ -branched monocarboxylic acids having 9 to 13 carbon atoms, vinyl chloride, ethylene, methyl acrylate, methyl methacrylate, ethyl acrylate, ethyl methacrylate, propyl acrylate, propyl methacrylate, n-butyl acrylate, n-butyl methacrylate, 2-ethylhexyl

acrylate and styrene, and contain from 1 to 10% by weight of one or more monomer units selected from the group consisting of N-methylolacrylamide, -methylolmethacrylamide, (meth)acryloyloxypropyltriethoxysilane, vinyltriethoxysilane and vinylmethyldiethoxysilane.

13. The process of claim 12, wherein at least one copolymer (a) is selected from the group consisting of polymers of vinyl acetate with ethylene; vinyl acetate with ethylene and a vinyl ester of at least one  $\alpha$ -branched monocarboxylic acid having 9 to 13 carbon atoms; n-butylacrylate and methyl methacrylate; n-butyl acrylate with 2-ethylhexyl acrylate and methyl methacrylate; styrene with at least one monomer selected from the group consisting of methyl acrylate, ethyl acrylate, propyl acrylate, n-butyl acrylate and 2-ethylhexyl acrylate; vinyl acetate with at least one monomer selected from the group consisting of methyl acrylate, ethyl acrylate, propyl acrylate, n-butyl acrylate, 2-ethylhexyl acrylate, and optionally with ethylene; and with from 1 to 10% by weight of N-methylolacrylamide or N-methylolmethacrylamide.

14. The process of claim 11, wherein partly hydrolyzed polyvinyl alcohols or partly hydrolyzed, hydrophobically modified polyvinyl alcohols having a degree of hydrolysis of from 80 to 95 mol% and a Höppler viscosity, in 4% strength aqueous solution, of from 1 to 30 mPa.s are employed as a polyvinyl alcohol.

15. The process of claim 11, wherein copolymers b) are employed, wherein copolymers b) are derived from at least one monomer selected from the group consisting of vinyl acetate, vinyl ester(s) of  $\alpha$ -branched monocarboxylic acids having 9 to 13 carbon atoms, vinyl chloride, ethylene, methyl acrylate, methyl methacrylate, ethyl acrylate, ethyl methacrylate, propyl acrylate, propyl methacrylate, n-butyl acrylate, n-butyl methacrylate, 2-ethylhexyl acrylate and styrene, and which are stabilized with from 1 to 40% by weight of a protective colloid selected from the group consisting of homo- and copolymers polymerized from at least one monomer selected from the group consisting of acrylic acid, methacrylic acid, fumaric acid, maleic acid and maleic anhydride.

16. The process of claim 11, wherein polyacrylic acid, polymethacrylic acid, or mixtures thereof are employed as the protective colloid of polymer(s) b).

17. The process of claim 15, wherein polyacrylic acid, polymethacrylic acid, or mixtures thereof are employed as the protective colloid of polymer(s) b).

18. The process of claim 11, wherein copolymers comprising acrylic acid, methacrylic acid, maleic acid, and/or maleic anhydride units and optimally units of monomers copolymerizable therewith are employed as protective colloids for polymer(s) b), the proportion of acid groups being from 80 to 99 mol%.

19. The process of claim 15, wherein copolymers comprising acrylic acid, methacrylic acid, maleic acid, and/or maleic anhydride units and optimally units of monomers copolymerizable therewith are employed as protective colloids for polymer(s) b), the proportion of acid groups being from 80 to 99 mol%.

20. The process of claim 12, wherein the powder composition containing copolymer(s) a) further comprise at least one bifunctional, masked aldehyde having at least 3 carbon atoms from which aldehyde groups are liberated in an acidic medium, as a crosslinking agent.

21. The process of claim 11, wherein a powder composition containing copolymer(s) a) is employed and contains at least one pulverulent, acidic additive.

22. The process of claim 11, wherein the powder composition comprising copolymer(s) b) is employed and contains at least one pulverulent, basic additive.

23. A jointing composition suitable for use in the process of claim 11, consisting essentially of:

- a) polyvinyl alcohol-stabilized copolymers comprising the polymerized product of at least one monomer selected from the group consisting of vinyl esters of straight-chain or branched alkylcarboxylic acids having

1 to 18 carbon atoms; (meth)acrylates of branched or straight-chain alcohols or diols having 1 to 18 carbon atoms; dienes; olefins; vinylaromatics; and vinyl halides, further containing from 0.1 to 20% by weight, based on the total weight of the copolymer, of one or more postcrosslinking comonomers selected from the group consisting of acrylamidoglycolic acid; methyl methacrylamidoglycolate; N-methylolacrylamide; -methylolmethacrylamide; allyl N-methylolcarbamate; alkyl ethers and esters of N-methylolacrylamide, of N-methylolmethacrylamide, and of allyl N-methylolcarbamate; (meth)acryloyloxypropyltri(alkoxy)silanes; vinyltrialkoxysilanes; and vinylmethyldialkoxysilanes; or

- b) polymers comprising the polymerized product of at least one monomer selected from the group consisting of vinyl esters of straight-chain or branched alkylcarboxylic acids having 1 to 18 carbon atoms; (meth)acrylates of branched or straight-chain alcohols or diols having 1 to 18 carbon atoms; dienes; olefins; vinylaromatics; and vinyl halides, said polymers stabilized with polymers comprising ethylenically unsaturated mono- or dicarboxylic acids or anhydrides thereof, having an acid content of from 50 to 99 mol%, are used as a mixture with sand,
- c) sand,

- d) optionally, a bifunctional masked aldehyde when copolymer a) is employed, and
- e) optionally, a pulverulent acidic or basic additive.

24. The composition of claim 23, wherein copolymers a) are employed, and contain one or more monomer units selected from the group consisting of vinyl acetate, vinyl esters of  $\alpha$ -branched monocarboxylic acids having 9 to 13 carbon atoms, vinyl chloride, ethylene, methyl acrylate, methyl methacrylate, ethyl acrylate, ethyl methacrylate, propyl acrylate, propyl methacrylate, n-butyl acrylate, n-butyl methacrylate, 2-ethylhexyl acrylate and styrene, and contain from 1 to 10% by weight of one or more monomer units selected from the group consisting of N-methylolacrylamide, N-methylolmethacrylamide, (meth)acryloyloxypropyltriethoxysilane, vinyltriethoxysilane and vinylmethyldiethoxysilane.

25. The composition of claim 24, wherein at least one polymer (a) is selected from the group consisting of polymers of vinyl acetate with ethylene; vinyl acetate with ethylene and a vinyl ester of at least one  $\alpha$ -branched monocarboxylic acid having 9 to 13 carbon atoms; n-butylacrylate and methyl methacrylate; n-butyl acrylate with 2-ethylhexyl acrylate and methyl methacrylate; styrene with at least one monomer selected from the group consisting of methyl acrylate, ethyl acrylate, propyl acrylate, n-butyl acrylate and 2-ethylhexyl acrylate; vinyl acetate with at least one monomer selected from the group consisting of methyl acrylate, ethyl acrylate, propyl acrylate, n-butyl acrylate, 2-ethylhexyl acrylate, and optionally

with ethylene; and with from 1 to 10% by weight of N-methylolacrylamide or N-methylolmethacrylamide.

26. The composition of claim 23 wherein at least one polymer (a) is employed, the powder composition further comprising at least one bifunctional masked aldehyde having at least 3 carbon atoms and at least one pulverulent acidic additive.

27. The composition of claim 23 wherein copolymers b) are employed, and are derived from at least one monomer unit selected from the group consisting of vinyl acetate, vinyl ester(s) of  $\alpha$ -branched monocarboxylic acids having 9 to 13 carbon atoms, vinyl chloride, ethylene, methyl acrylate, methyl methacrylate, ethyl acrylate, ethyl methacrylate, propyl acrylate, propyl methacrylate, n-butyl acrylate, n-butyl methacrylate, 2-ethylhexyl acrylate and styrene, and which are stabilized with from 1 to 40% by weight of a protective colloid selected from the group consisting of homo- and copolymers polymerized from at least one monomer selected from the group consisting of acrylic acid, methacrylic acid, fumaric acid, maleic acid and maleic anhydride.

28. The composition of claim 23 wherein polyacrylic acid, polymethacrylic acid, or mixtures thereof are employed as the protective colloid of polymer(s) b).

29. The composition of claim 23 wherein the powder composition employs copolymer(s) b), and contains at least one pulverulent, basic additive.



**IX. EVIDENCE APPENDIX**

None.

**X. RELATED PROCEEDINGS APPENDIX**

None.